FULL BOARD MEETING
T-214

Tuesday, January 13, 2004

DRAFT MINUTES

The Fernald Citizens Advisory Board met from 6:00 p.m. to 9:00 p.m. on Tuesday, January 13, 2004, in T-214 at the Fernald Closure Project site.

Members Present:	Jim Bierer Sandy Butterfield Steve DePoe Lou Doll Pam Dunn Gene Jablonowski Graham Mitchell Gary Storer Bill Taylor Gene Willeke
Members Absent:	French Bell Lisa Blair Kathryn Brown Marvin Clawson Lisa Crawford Robert Tabor
Designated Federal Official:	Gary Stegner
The Perspectives Group Staff:	Douglas Sarno David Bidwell
Fluor Fernald Staff:	Sue Walpole

Approximately twenty spectators also attended the meeting, including members of the public and representatives from the Department of Energy and Fluor Fernald.

General Comments
Jim Bierer welcomed attendees and noted the light attendance of CAB members was due to illness or illness in members' families. He introduced Gary Storer, who is replacing Jane Harper as the Crosby Township representative to the CAB. Jim remarked that a letter was sent to Lisa Blair, thanking her for her service and removing her from the FCAB due to non-attendance. He commented that the CAB still has a good core group. He decided to wait to approve the December minutes until more people could review them.

Doug asked that the CAB comment on two letters: draft comments on the Fernald Institutional Controls Plan and draft comments on the Office of Legacy Management strategic plan. He also asked for comments on the draft brochure for generating interest in the Future of Fernald. Comments on each of these documents are due by Friday, January 30.

Ex-Officio Comments
Site Manager Bill Taylor remarked that the Silos Project has made substantial progress since the last meeting. The silos are on a critical path, so the site is very focused on that project. D & D has restarted and the lab building is coming down. Bill reported that DOE has drafted a plan for wintertime placement of materials in the on-site disposal facility (OSDF). Safety has improved greatly across the site and Bill wants to see that trend continue throughout the calendar year. There will be workforce reductions of around 200 people in the spring of 2004. Bob Warther of DOE-Ohio echoed Bill's comments on the tremendously improved safety performance.

Graham Mitchell reported that both he and Gene Jablonowski had toured the silos area and found it to be very impressive. Graham also reported that the Portsmouth site is kicking off the RBES process with a public meeting this month. He hopes that it will spur land-use planning for the site. Graham stated that he encouraged Portsmouth to seek out expertise from the Fernald site as soon as possible. Gene Jablonowski agreed that the silos area is impressive. Doug Sarno mentioned that a tour of the area for the FCAB is scheduled for April 6, 2004.

Jamie Jameson of Fluor reiterated that it was serious business to reduce the workforce, and that Fluor is following a very tight Human Resources procedure. He reintroduced Con Murphy as manager of the Silos Project.

Groundwater
Doug Sarno announced that the bulk of the evening would be spent talking about groundwater. Fluor produced a binder, or toolbox, that will frame where the decision-making process stands, ensure that questions are answered, and help to provide a clear path forward. Jim Bierer mentioned that some FRESH members met the previous week to review the toolbox.

Marc Jewett remarked that the toolbox was patterned on a 1994-95 toolbox and summarizes the issues pertaining to groundwater. Marc said that he didn't want a decision to be made at this meeting. Rather, he wanted everyone to understand the information provided in the toolbox. Marc walked the group through the organization of toolbox. He noted that the cover of binder is a photograph that shows the site's outfall into the Great Miami River.

Marc stated that the objective for the meeting was to understand the regulatory framework, impacts on the environment, and possible approaches to groundwater

remediation. Feedback from the CAB will be requested at the next meeting. DOE's objectiveis to dismantle the AWWT (Advanced Waste Water Treatment facility) and dispose of it in the OSDF under the 2006 closure plan. The goal is to save disposal costs down the road. DOE will be faced with expensive off-site disposal if it doesn't get AWWT rubble into the OSDF before it closes.

Marc reviewed the Technical and Regulatory Backdrop section of the toolbox. He compared the scale of the AWWT to the IAWWT (Interim Advanced Waste Water Treatment) and SPIT (South Plume Interim Treatment) facilities. IAWWT and SPIT are smaller treatment facilities. SPIT treats only groundwater, while IAWWT treats storm water or groundwater. There are three subsystems to AWWT: storm water, remedial wastewater, and groundwater. He noted that not every drop of water on the site gets treated. Some untreated groundwater is mixed with treated water to meet the outfall goals.

Marc framed the health-based regulatory limits for uranium in drinking water (30 parts per billion (ppb)), the Great Miami River (530 ppb), and the Great Miami River sediment (210 ppb). He noted that the Great Miami Aquifer must be remediated to drinking water standards of 30 ppb uranium. Marc also reviewed the risk levels connected with each of these regulatory standards. The standard for sediment in the river was set at a recreational level. Marc acknowledged that cleanup and outfall levels in the Records of Decision were based on complex negotiations, not just a target risk levels.

Marc also reviewed how the concentration of uranium in the river is impacted downstream from the Fernald outfall. Under normal flow, the concentration of uranium increases from 1 ppb upstream to 1.12 ppb after mixing. Under a low flow, it increases to 1.5 ppb. Graham Mitchell said that because there are a lot of pools and riffles in the Great Miami River, mixing occurs relatively quickly. He stated that the Fernald outfall is fully mixed with other river water by the time it reaches the New Baltimore Bridge.

Marc discussed the Ohio EPA monitoring stations upstream of the Fernald outfall, at the outfall, and downstream at New Baltimore. He reviewed actual data from these stations, including data taken during a below-average low flow. Marc said that in each scenario, the Fernald outfall increased the concentration of uranium in the river by a fraction of one ppb. Dennis Carr of Fluor stated that the limit of 530 ppb in the Great Miami River is measured beyond the mixing zone.

Doug asked if there were other contributors of uranium into the river other than Fernald. Marc said that the main contributor is fertilizer runoff from agricultural fields. There is a high concentration of uranium in phosphate. Phosphate salt is the most common source of uranium in the earth's crust and is a major component of many fertilizers. Pam Dunn asked how other DOE sites in the Mississippi Watershed contribute to totals of uranium in the Mississippi River. Jim Bierer stated that because major DOE sites have been remediated, they should be a minor contributor of uranium overall.

Marc noted that uranium is leaving the site in a dissolved state, not as gravely chunks or flecks or fragments of any kind. He expressed concern about the common public perception that uranium is sitting in the sediment in the river. As an example, Marc talked about members of the public who had a poor understanding of this issue and were afraid to go near the river. Steve DePoe said that Marc's presentation is a good example of the kinds of presentations that are needed after site closure, so that current and future residents can understand the issues.

Marc explained that the outfall concentration limits for uranium that are contained in the Records of Decision were set as performance standards, not based on risk levels. When AWWT was constructed, they saw that it could achieve discharge concentrations of uranium at 20 ppb. The outfall limits were set based on that performance-based standard. Marc stated that it was a "nice story" that the outfall concentrations matched the proposed drinking water standard. Eventually, people began to believe that the outfall must achieve drinking water standards. That perception was reinforced when the outfall limits were revised to match the final drinking water standard of 30 ppb. The 530 ppb requirement for concentrations of uranium in the Great Miami River is overridden by this 30 ppb outfall performance standard.

Dennis reviewed the language from the ROD. Graham Mitchell noted that at the time the RODs were being written, there was a lot of controversy regarding whether water from the site should be treated. Marc stated that the discharge limit of 600 pounds of uranium per year was based on a 20 ppb concentration in the outfall. The 600 pounds was not adjusted after the outfall limit was changed to 30 ppb. Doug Sarno noted that 600 pounds is really the most limiting number for water treatment at the site.

Dennis stated that given the 30 ppb limit for uranium concentration and the 600-pound annual limit, the site could never create a 530 ppb concentration in the river. Marc stated that the concentration of the Fernald outfall would have to be around 14,200 ppb to reach the 530 ppb limit for the river water. The expected maximum at Fernald, if treatment stopped, would be 150 ppb. Dennis stated that the site has discussed asking for the concentration limit for discharge to be changed to 90 ppb.

Marc reviewed the volumes of uranium captured by treatment at AWWT and noted that the uranium is shipped to Envirocare for disposal. Doug asked where the uranium would go after the Waste Pits closed and there were no longer train shipments being sent to Utah on a regular basis. Dennis said that the waste would still go to Envirocare.

Marc noted that the ROD obligates DOE to expand AWWT to fill the building footprint. This led to the expansion system that was installed at AWWT after its initial construction. The ROD and NPDES permit also sets the priority for flows to be treated at the site. The priority for treatment is the most contaminated water. Not all water produced at the site is treated. Groundwater and storm water that exceed treatment capacity can be discharged directly to the river. In addition, significant volumes of untreated groundwater are mixed with treated water. Marc reviewed the slide showing the mixing of sources to meet monthly discharge limits, and the annual mass limit (600 pounds). Marc stated that reinjection wells must use groundwater that has already passed through treatment.

Dennis stated that a well-by-well decision is made to treat groundwater streams. As other sources of contaminated water are eliminated, treatment decisions will be impacted. The current remedy envisions a time when all streams combined together would not require treatment, because total concentrations of uranium would be so low.

Marc summarized the status quo approach to groundwater remediation at the site. All flows of contaminated water, except groundwater and leacheate, would be gone by 2006. The pumping of groundwater would be completed around the year 2023. Once the combined groundwater concentrations for uranium drop below 30 ppb and are stabilized, treatment could stop and AWWT could be taken down. Optimistic and pessimistic estimates predict that this would be possible by 2007 or 2015, respectively. The actual date probably would lie somewhere in between. A policy decision would have to be made about how long to keep AWWT in standby mode in case uranium levels in

the aquifer rebound. Since the OSDF would be long-closed, DOE would have to dispose of AWWT off site. Disposal of 15,000 cubic yards of debris, and 70,000 cubic yards of soil from the AWWT D & D would require about 5,700 truck shipments.

Marc referred the group to the section of the toolbox entitled, "Decision Framework and Options". He summarized "major pieces of the puzzle." To get AWWT and the soils below it into the OSDF by June 2006 closure, AWWT would have to go off line around April 2005. Pam Dunn asked if the Silos Project is currently expected to go beyond April of 2005. Dennis said yes, but it should not produce water that needs treatment. If it did, it would be only a small amount.

Marc referred the group to page 28 of the toolbox, which addresses the question, "When do non-groundwater flows ramp down and when do they go away?" Marc said that in 2006, non-groundwater flows are eliminated. Marc reviewed a table, which shows water treatment needs in April 2005. The waste pits, which create a high-concentration flow, would be finished by April 2005. Storm water treatment needs would be significantly reduced, due to the shrinking footprint of the production area. Marc noted that the volume of groundwater requiring treatment could also be reduced by that time.

Graham asked if there was any way to eliminate some flows earlier, so they would be completed by April 2005. Dennis answered that these projects could not be competed earlier. Bill Taylor of DOE stated that AWWT is running at full capacity, so it could not treat more water. Jim asked how much capacity would be needed to cover needs in April 2005. Marc responded that for one year, 800-1000 gallons per minute (gpm) of additional capacity would be needed. This is an estimated 600 gpm beyond the capacity of SPIT and IAWWT. Jim asked if it was possible to remove portions of AWWT and still having some treatment capacity beyond April 2005. Dennis said that carving down AWWT is not as simple as it sounds. It is a complex, integrated system. Dennis stated that it would be very difficult to meet discharge standards while working all this out.

Graham asked if it was possible to shift the D & D of AWWT into 2007, in order to complete treatment of non-ground water flows, which would be more cost-beneficial. Bob Warther stated that if closure of the OSDF slips into 2007, Fluor would not make its maximum fee. Graham asked if it would be possible to pursue that scenario without bringing penalty to anyone. Dennis stated that he did not believe that was possible. Doug stated that the D & D of AWWT was never considered part of closure in 2006, and asked if it was added to the closure contract. Bob stated that it was added to Fluor's contract during the renegotiation last year. Bob stated that the public should not confuse AWWT with groundwater, because the completion of the groundwater restoration does not require the AWWT. Bob stated that there is a large cost and risk difference between disposal of AWWT in the OSDF and in off-site disposal.

Using a triangle-shaped graphic, Marc stated that there was a three-way interrelationship among options for groundwater: increasing or replacing treatment capacity, changing discharge limits, and the timeline for getting AWWT into the OSDF. Marc then reviewed five options, ranging from A to E:

Option A. Stay the course; status quo.

Option B. Continue with the present course, with an interim cap on OSDF Cell 8 to allow AWWT rubble to be placed in the OSDF at a future time. The time needed for an interim cap is somewhere between 2007 and 2015. An interim cap would be the same as the permanent cap, but without the heavy outside armor, or "riprap." In response to a

question, Dennis stated that AWWT should need no major improvements to operate until 2015. Marc stated that cost estimates for this option include an optimistic and pessimistic scenario for how long AWWT and an interim cap would be needed.

Option C. Demolish AWWT in 2005, and use IAWWT and SPIT, plus another small facility, to meet treatment needs. Groundwater reinjection would end, meaning the overall time needed for aquifer restoration would increase by an estimated three years. Because less uranium mass would be pulled out of the aquifer, less treatment would be necessary, but the total time required for groundwater pumping would increase. Shorter treatment time means longer pumping.

Option D. Revise discharge limits to meet health-based standards. Marc noted that this option caused local controversy in the summer of 2003. The maximum concentration of uranium in outfall would be increased to 150 ppb, which would allow AWWT, SPIT, and IAWWT to be placed in the OSDF before the end of 2006. A portable treatment system could be put in place in case of an aquifer rebound. After mixing, there would be a 0.6 ppb jump in uranium levels in the river under typical flow, and 2.5 ppb under low flow conditions.

Option E. Monitored Natural Attenuation (MNA). This option is the same as Option D, combined with a MNA approach. Marc explained that this means only off-site sections of the aquifer would be restored to 30 ppb. Once the plume was contained to the site fence line, the site would stop pumping groundwater and enter a monitoring mode. If levels of uranium increased above 30 ppb in offsite areas of the aquifer, groundwater pumping would resume. Marc estimated it would take until about 2068 to meet the total aquifer goal of 30 ppb. Pam Dunn remarked that a $20 million cost savings for the MNA option is insignificant considering the total cost of the remediation project.

Steve Depoe commented that the triangle diagram should also include public trust and confidence level. He explained that while a hard and fast number can't be put on this, it is definitely part of the equation. He stated that talk of changing the discharge limits would reduce public trust and confidence in the total remedy.

Pam asked if additional long-term stewardship costs are included in the cost estimates for options that increase the total time required for aquifer restoration. Dennis stated that this was undefined. Steve stated that there are "uncertainty costs" in extending the timeline. Pam remarked that it was misleading to say that it will save money until these long-term costs are added to total estimates. She also asked for more detailed cost information for a skid-mounted treatment system and other aspects of the options.

The group discussed the perception that DOE wants a "blank check" to increase levels of uranium in the river to 530 ppb. Bob Warther stated that DOE has not sought a blank check. Dennis clarified that the site does not want to increase the limit to 530 ppb. Marc stated that if a smaller treatment facility were acceptable (Option C), they would be able to calculate exactly the amount of regulatory relief required.

Doug Sarno stated that at the next FCAB meeting, the Board would evaluate the options presented and determine if there are other alternatives. He asked if more information was needed. Gene Willike asked for more information on what the concentrations of groundwater would be in the future. Pam asked for more information on the impacts to long-term stewardship as the groundwater project is extended. Doug asked what would happen to the lagoons and basins used for stormwater retention; Dennis answered that they would be removed prior to 2006, regardless of what was decided for groundwater

treatment. Pam asked if decisions on groundwater would create a domino effect in which other cleanup agreements (e.g., for soils) would be reconsidered. Dennis stated that no one has suggested a change in soils cleanup.

Doug Sarno stated that Options A and B did not require regulatory relief, and that Option C does not necessarily need regulatory relief. Gene Willeke remarked that regulatory relief would require a ROD-amendment, which is a long process.

Jim Bierer asked if regulators could provide some insight on “show-stoppers” for regulatory relief. Graham stated that the interim cap is an uncertainty, because no one knows what kind of budget will be available when the OSDF needs to be reopened and permanently closed. Doug suggested that any option requiring an interim cap might need some sort of funding assurance. Gene Jablanowski stated that Options A, C, and D are the only viable options, based on discussions at the meeting. He stated that the U.S. EPA was not willing to entertain an interim cap or MNA. Bob Warther stated that Option A, the status quo, would continue to be evaluated for comparison purposes, but it was not a viable option to DOE. Graham commented that he was concerned about ending operation of AWWT too soon, when it has served the project successfully. Dennis stated that they will have less troublesome flows when trying to stabilize the new facility, but he could not say there would be no problems bringing a new facility online.

Jim Bierer asked if a replacement facility would be permanent or portable. Dennis responded that it would have to be affixed to the ground, but the footprint would be much, much smaller. Doug asked if there was a sense of staff requirements for the various options. Bob stated that he would also be interested in that information.

Pam asked if groundwater treatment after 2006 would be managed by Environmental Management or Legacy Management. Bob stated that Legacy Management would handle aquifer activities that extend beyond 2006.

Public Comments
Steve DePoe stated that he would submit individual comments on the Fernald Institutional Controls Plan. Steve stated that a public information component must be part of any institutional controls plan. He added that there was a lot of potential for developing a "Legacy Management Toolbox," which would inform the community about the site and long-term stewardship requirements.

The meeting adjourned at 9:00 p.m.

Next Meeting
The next meeting will held on Wednesday, February 18 from 6:00 to 9:00 p.m. in T-214 at the Fernald site.

_____

Jim Bierer Date
Fernald Citizens Advisory Board Chairman

_____

Gary Stegner Date
Deputy Designated Federal Official